

MobiClean™ Soot Filter for Diesel Locomotive Applications

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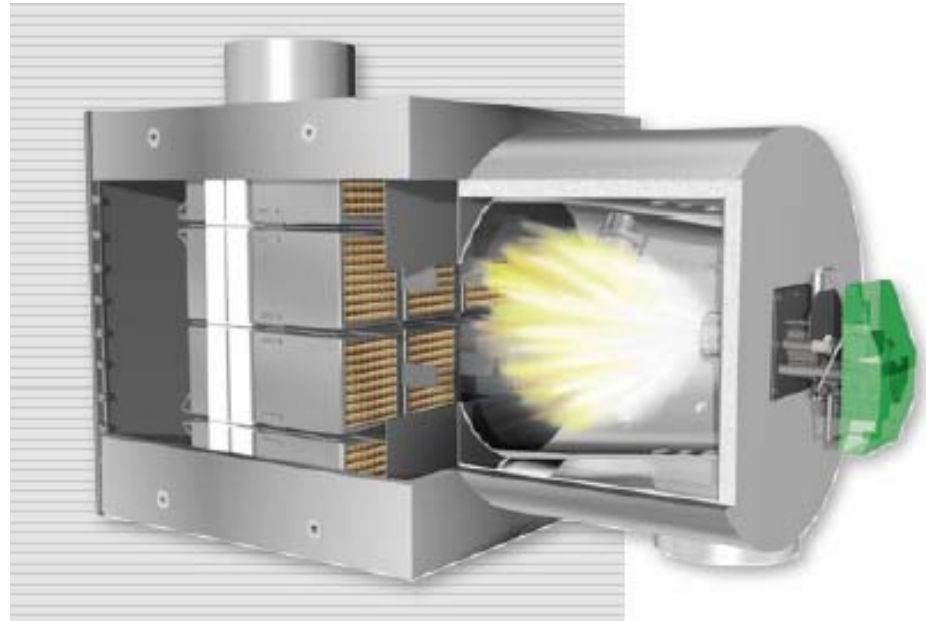
MIRATECH Corporation



►► MobiClean Soot Filter

Active Regeneration

- The particulate is “regenerated” – by monitoring the back pressure on the engine and activating a diesel fuel duct burner to heat the exhaust and burn off the accumulated soot.



▶▶ MobiClean Technology Details

▶▶ Design

- Designed and Manufactured by HUG Engineering in Switzerland
- Designed Specifically for Locomotive Applications
 - High vibration and shock loads
 - Low exhaust temperatures majority of time

▶▶ INSTALLATION

- Flanged into exhaust. Electronics need to be tied to power supply and monitoring point in exhaust
- Diesel fuel supply pressure to burner = 1.5 BAR
- Small amount of air required by the burner

▶▶ OPERATIONAL DETAILS

- PLC control regenerates the filters when backpressure exceeds preset limit or after a specific number of hours.
- Approximately 1% of engine fuel consumption

▶▶ TESTING & PERFORMANCE-

- Over 85% reduction of PM 2.5.

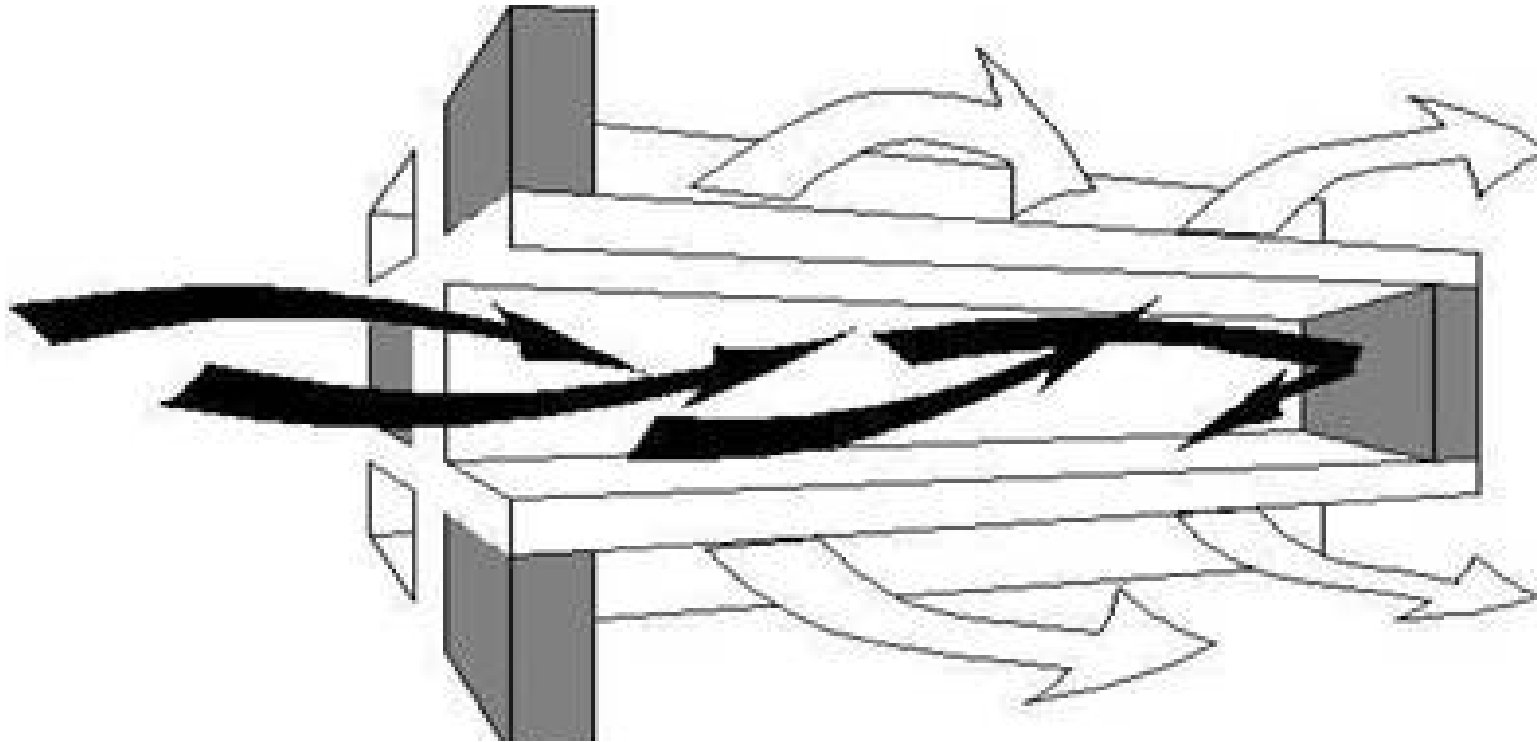
▶▶ MobiClean Filters

Silicon Carbide Filters

- ▶▶ The Particulate is trapped on the surface of a catalyzed, high temperature, wall flow, porous Silicon Carbide filter.
- ▶▶ Silicon Carbide provides superior thermal durability over metal fiber and cordierite filters
- ▶▶ Following regeneration, the soot leaves only a small amount of ash on the surface that can be blown off or washed off during maintenance periods.
- ▶▶ Sulfur Tolerant Catalyst Applied to Reduce Regeneration Temperature

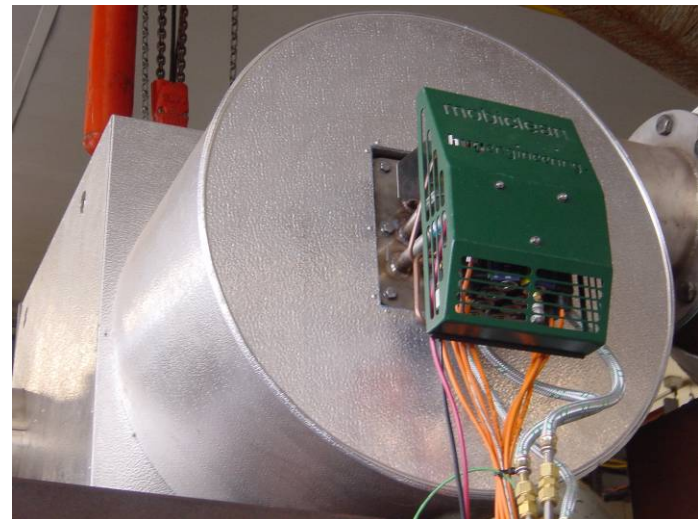
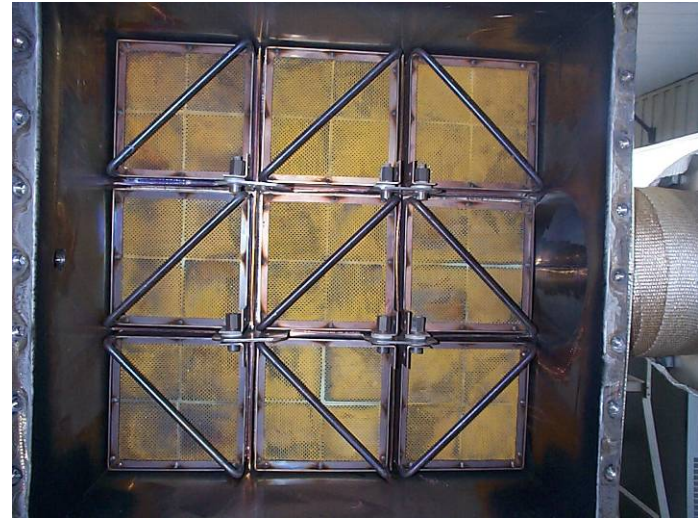


►► MobiClean Filters – Wall Flow



▶▶ MobiClean Features

- ▶▶ Individually Encased Filters that Bolt in Place
- ▶▶ Filters Can Be Removed for Cleaning/Replacement
- ▶▶ Lifting Handle for Carrying Filters
- ▶▶ Side or Top Access, Depending on Design
- ▶▶ Burner System Mounts on Front
- ▶▶ Rugged PLC Controller for Burner System Mounted Remotely from the Filter Housing

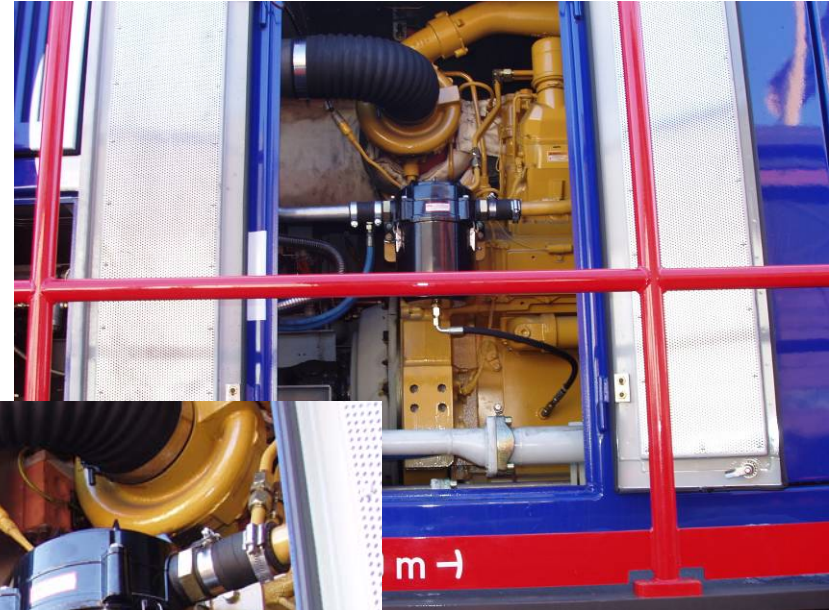


▶▶ MobiClean Experience

- ▶▶ **HUG Engineering has sold over 200 MobiClean Systems in Europe**
- ▶▶ **Both Retrofit and New Locomotive Applications**
- ▶▶ **Custom Designs to Fit Space Requirements**
- ▶▶ **Horizontal or Vertically Mounted Filters**



► SBB 1500 kW Switcher



▶ Vossloh 2700 kW Switcher



▶ Vossloh 2700 kW Switcher



» MobiClean Summary

MobiClean Benefits

- » Soot Trapping occurs all the time – it is not dependent on engine load
- » All fuels acceptable – special, high priced “ultra low” sulfur diesel fuel not required
- » Robust design provides fail safe operation, and modular components for service and maintenance
- » Competitively priced
- » Proven in Power Generation and Locomotive applications
- » Easy installation and start-up
- » Poison Resistant
- » Low back pressure – fresh and at regeneration within engine manufacturer specifications
- » Provides ~25 dBA of Sound Reduction
- » No specific NO/NO₂ ratio required
- » No specific NO_x/PM ratio required

►► For Additional Info Contact:

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